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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,054	01/04/2002	Steven Teig	SPLX.P0047	1801
48947	7590	01/11/2006		
STATTLER, JOHANSEN, AND ADELI LLP 1875 CENTURY PARK EAST SUITE 1360 CENTURY CITY, CA 90067			EXAMINER DIMYAN, MAGID Y	
			ART UNIT	PAPER NUMBER
			2825	

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/040,054

Applicant(s)

TEIG ET AL.

Examiner

Magid Y. Dimyan

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 January 2002 - 25 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-14 is/are rejected.
- 7) ☒ Claim(s) 6,7,15 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/17/03, 11/17/03</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This Office Action pertains to Application No. 10/040,054, filed 04 January 2002.

Claims 1 – 16 remain pending in this Application.

### ***Claim Objections***

2. Claims 1, 5, 6, 8 and 10 are objected to because of the following informalities:

- Claim 1, line 9, insert --and-- after “;”.
- Claim 3, line 2, delete “sub-region” and insert --sub-regions--.
- Claim 5, line 3, insert --and-- after “;”.
- Claim 6, lines 9, 11 and 19, insert --and-- after “;”. Also, claim 6, line 20, delete “an” and insert --a--.
- Claim 8, line 3, insert --and-- after “;”.
- Claim 10, line 4, insert --and-- after “;”.

3. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 – 5 and 8 – 14 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: in claim 1, lines 4 and 5, Applicants cite “**identifying a set of routes that traverse the particular set of potential sub-regions**”, but then continue by citing “**for each particular route**

**identified** without specifying how the **particular identified route is extracted** or **obtained** from the **identified set of routes**.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. **Claims 1, 2, 3 and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,295,634 B1 to Matsumoto.**

8. Regarding claim 1, Matsumoto discloses a method of pre-computing routes for nets (see col. 1, ll. 61 – 67) for a router that uses a set of partitioning lines to partition a region of a design layout into a plurality of (triangular) sub-regions (see Fig. 3, block S11; Figs. 7, 11, 12; col. 5, ll. 40 – 64), the method comprising: for each particular set of potential sub-regions, identifying a set of routes that traverse the particular set of potential sub-regions (see Figs. 3 and 10, blocks S220/S240; col. 7, ll. 19 – 41; col. 18, ll. 1 – 14); for each particular route identified for each set of sub-regions, determine whether the particular route is stored in a storage structure (see Fig. 1, blocks 112 and 202; Fig. 3, block S118; Fig. 10; Fig. 28; col. 13, ll. 33 – 43 and col. 14, ll. 27 – 33); and when the particular route is not stored in the storage structure, storing the particular

route in the storage structure (see also col. 14, ll. 5 – 23; col. 22, ll. 27 – 50). Thus, Matsumoto clearly teaches all the claimed limitations.

9. As per claim 2, see Fig. 24, which shows numerous examples of diagonal route edges of the identified routes, as claimed.

10. Pursuant to claims 3 and 4, see (8) above, as well as Figs. 22 and 23 (Route B); col. 22, ll. 18 – 32, which teach the claimed elements pertaining to associating a route with a sub-region.

### ***Allowable Subject Matter***

11. Claims 5, 6, 7, 15 and 16 are allowable if amended to overcome the 35 U.S.C 112 rejection and objections cited above.

12. The following is a statement of reasons for the indication of allowable subject matter: prior art does not teach, or suggest, the method for pre-computing routes using an EDA router that routes **nets with a region of an IC layout** that includes: defining a set of **partitioning lines to partition** the region into sub-regions; **identifying and storing a first set of routes** that **connect the first set of sub-regions**, and establishing a **relationship between the first set of routes and sub-regions**; **identifying a second set of routes that connect a second set of sub-regions**, storing the new route if not stored already, and **establishing a relationship between the new route and the second set of sub-regions**; and when a repeating route in the second set is stored, **establishing a relationship between the repeating route and the second set of sub-regions**.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Magid Y. Dimyan whose telephone number is (571) 272-1889. The examiner can normally be reached on Monday - Friday 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on (571) 272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Magid Y Dimyan  
Examiner  
Art Unit 2825

myd  
29 December 2005

M-11

  
VUTHE SIEK  
PRIMARY EXAMINER